

Patent Claims

1. Method for nozzle-jetting oxygen into a synthesis reactor, e.g. for oxy-dehydration, for largely axial flow of the gas mixture through a catalyst bed.

having the distinctive feature that

the oxygen is fed to a ring distributor system arranged above the catalyst bed in pure form, as air mixed with inert gas or water vapour and is jetted on to the catalyst surface through several exit openings in the ring distributor at an inclined angle from the vertical.

2. Method as per claim 1,

having the distinctive feature that

the jetting of the oxygen is taken up in a direction on to the reactor center and/or in direction on to the reactor wall and/or in a tangential alignment.

3. Method as per claim 1 or 2,

having the distinctive feature that

the jetting of the oxygen takes place in tangential alignment and for each ring of the ring distributor in alternating alignment from ring to ring of the ring distributor.

4. Method as per one of the previous claims,

having the distinctive feature that

the jetting of the oxygen takes place in a plane approximately 50-300 mm above the catalyst bed, which ensures an oxygen dwelling time of ≤ 1 second in the space above the catalyst bed.

5. Device for nozzle-jetting oxygen into a synthesis-reactor, e.g. for oxy-dehydration, with largely axial flow of the gas mixture through a catalyst bed, especially for conducting the method according to one of the previous claims,

having the distinctive feature that

there is a ring distributor consisting of several concentric ring pipes(7) provided with exit openings (6) above a catalyst bed (3), where the exit openings (6) are designed for jetting the oxygen on to the catalyst surface at an angle inclined away from the vertical.

6. Device as per claim 5 with a central gas inlet pipe that centrically penetrates that catalyst bed and with a mixing dome above the catalyst be,

having the distinctive feature that

there is an oxygen ring distributor (7) surrounding the centric gas guiding pipe (2).

7. Device as per claim 5 or 6,

having the distinctive feature that

the ring distributor is formed with several co-axially positioned ring pipes (7) with gas exit openings (6) that ensure a gas flow in the direction on to the reactor center and/or reactor wall and/or in tangential direction.

8. Device as per claim 5 or one of the following claims,

having the distinctive feature that

adjacent gas exit openings (6) have a different flow outlet directions.

9. Device as per claim 5 or one of the following claims,
having the distinctive feature that
the gas exit openings (6) are aligned in alternating sequence to adjacent exit openings of an adjacent ring pipe.
10. Device as per claim 5 or of the following claims,
having the distinctive feature that
the gas exit openings (6) are designed as holes or nozzles.